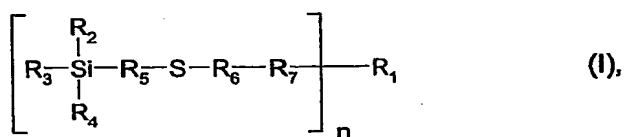


What is claimed is:

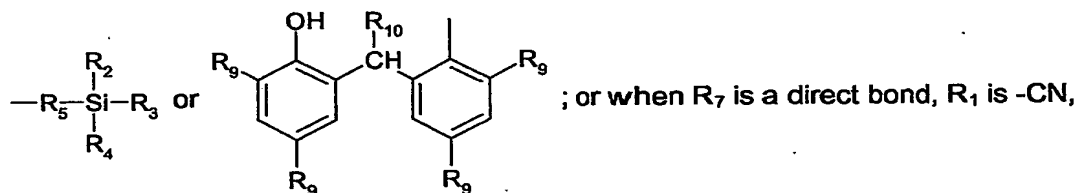
## 1. A composition comprising

- a) a naturally occurring or synthetic elastomer susceptible to oxidative, thermal, dynamic, light-induced and/or ozone-induced degradation,
- b) a white reinforcing filler, and
- c) as coupling agent, at least one compound of the formula I



wherein, when n is 1,

R<sub>1</sub> is hydrogen, C<sub>1</sub>-C<sub>25</sub>alkyl, C<sub>1</sub>-C<sub>25</sub>alkyl substituted with furyl, morpholine, C<sub>1</sub>-C<sub>4</sub>di-alkylamino, C<sub>1</sub>-C<sub>4</sub>trialkylammonium or M<sup>+</sup> O<sub>3</sub>S<sup>-</sup>; C<sub>2</sub>-C<sub>25</sub>alkyl interrupted by oxygen; C<sub>5</sub>-C<sub>12</sub>cycloalkyl, C<sub>2</sub>-C<sub>25</sub>alkenyl, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl-substituted phenyl; C<sub>7</sub>-C<sub>12</sub>phenoxyalkyl, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl substituted C<sub>7</sub>-C<sub>9</sub>bicycloalkyl;



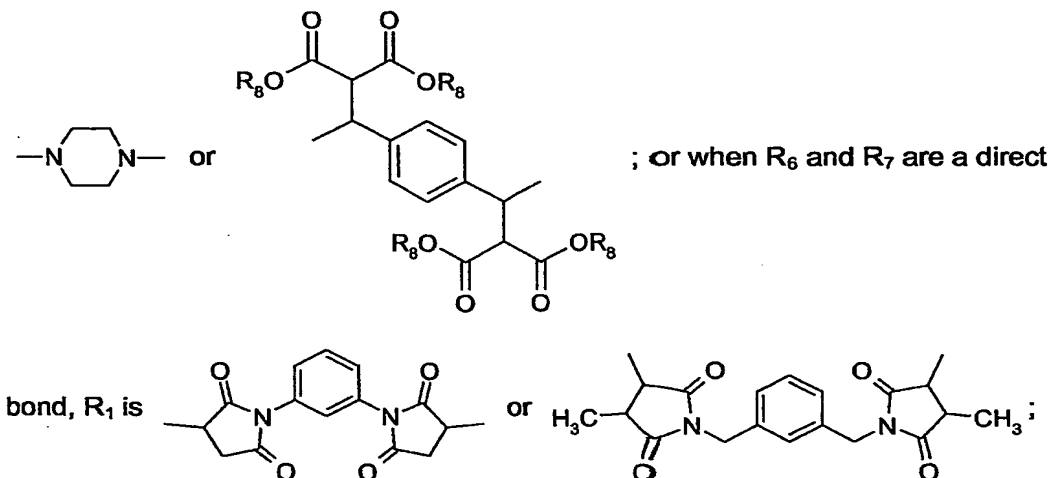
-SOR<sub>8</sub>, -SO<sub>2</sub>R<sub>8</sub>, -NO<sub>2</sub> or -COR<sub>8</sub>,

when n is 2,

R<sub>1</sub> is C<sub>1</sub>-C<sub>25</sub>alkylene, C<sub>1</sub>-C<sub>25</sub>alkylene ~~substituted with C<sub>1</sub>-C<sub>4</sub>alkyl~~; C<sub>2</sub>-C<sub>25</sub>alkylene substituted with C<sub>1</sub>-C<sub>4</sub>alkyl and interrupted by oxygen; C<sub>2</sub>-C<sub>25</sub>alkylene interrupted by



- 55 -



$R_2$ ,  $R_3$  and  $R_4$  are each independently of the others  $C_1$ - $C_{25}$ alkyl,  $C_2$ - $C_{25}$ alkyl interrupted by oxygen;  $C_5$ - $C_{12}$ cycloalkyl,  $C_2$ - $C_{25}$ alkenyl, unsubstituted or  $C_1$ - $C_4$ alkyl-substituted phenyl,  $C_7$ - $C_9$ phenylalkyl,  $C_1$ - $C_{25}$ alkoxy,  $C_3$ - $C_{25}$ alkoxy interrupted by oxygen;  $C_5$ - $C_{12}$ cycloalkoxy,  $C_2$ - $C_{25}$ alkenyloxy, unsubstituted or  $C_1$ - $C_4$ alkyl-substituted phenoxy,  $C_7$ - $C_9$ phenylalkoxy, halogen,  $C_2$ - $C_{25}$ alkanoyloxy or unsubstituted or  $C_1$ - $C_4$ alkyl substituted benzoyloxy; with the proviso that at least one of  $R_2$ ,  $R_3$  or  $R_4$  is  $C_1$ - $C_{25}$ alkoxy,  $C_3$ - $C_{25}$ alkoxy interrupted by oxygen;  $C_5$ - $C_{12}$ cycloalkoxy,  $C_2$ - $C_{25}$ alkenyloxy, unsubstituted or  $C_1$ - $C_4$ alkyl-substituted phenoxy,  $C_7$ - $C_9$ phenylalkoxy, halogen,  $C_2$ - $C_{25}$ alkanoyloxy or unsubstituted or  $C_1$ - $C_4$ alkyl substituted benzoyloxy;

$R_5$  is  $C_1$ - $C_{25}$ alkylene,  $C_5$ - $C_{12}$ cycloalkylene, unsubstituted or  $C_1$ - $C_4$ alkyl substituted phenylene;

$R_6$  is a direct bond,  $C_1$ - $C_{25}$ alkylene; or  $C_1$ - $C_{25}$ alkylene substituted with  $C_1$ - $C_{25}$ alkyl,  $C_2$ - $C_{25}$ alkoxycarbonyl or phenyl;

$R_7$  is a direct bond or  $\text{—}\overset{\text{O}}{\parallel}\text{C—R}_{13}$ , with the proviso that, when  $R_7$  is a direct bond and

$n$  is 1,  $R_6$  is not a direct bond; and with the proviso that, when  $R_7$  is  $\text{—}\overset{\text{O}}{\parallel}\text{C—R}_{13}$ ,  $R_6$  is not a direct bond;

$R_8$  is  $C_1$ - $C_{25}$ alkyl,  $C_2$ - $C_{25}$ alkyl interrupted by oxygen;  $C_5$ - $C_{12}$ cycloalkyl,  $C_2$ - $C_{25}$ alkenyl,  $C_2$ - $C_{25}$ alkinyl,  $C_7$ - $C_9$ phenylalkyl, unsubstituted or  $C_1$ - $C_4$ alkyl-substituted phenyl,

$R_9$  is  $C_1$ - $C_5$ alkyl,

$R_{10}$  is hydrogen or  $C_1$ - $C_4$ alkyl,

- 56 -

$R_{11}$  and  $R_{12}$  are each independently of the other hydrogen,  $CF_3$ ,  $C_1$ - $C_{12}$ alkyl or phenyl, or  $R_{11}$  and  $R_{12}$ , together with the carbon atom to which they are bonded, form a  $C_5$ - $C_8$ cycloalkylidene ring that is unsubstituted or substituted by from 1 to 3  $C_1$ - $C_4$ alkyl groups,

$R_{13}$  is oxygen or  $-N(R_{14})-$ ,

$R_{14}$  is hydrogen or  $C_1$ - $C_{12}$ alkyl,

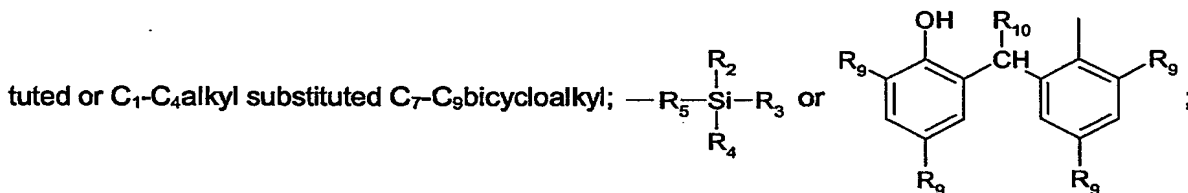
$M$  is sodium, potassium or ammonium, and

$n$  is 1 or 2; or an oligomeric hydrolysis product of the compound of the formula I.

2. A composition according to claim 1, wherein

when  $n$  is 1,

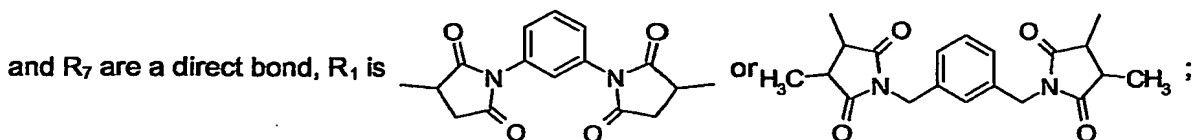
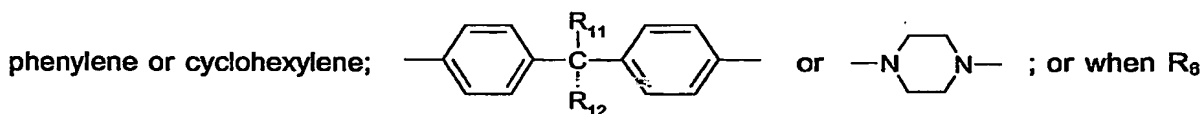
$R_1$  is hydrogen,  $C_1$ - $C_{18}$ alkyl,  $C_1$ - $C_{18}$ alkyl substituted with furyl, morpholine,  $C_1$ - $C_4$ dialkylamino,  $C_1$ - $C_4$ trialkylammonium or  $M^+ O_3S^-$ ;  $C_2$ - $C_{18}$ alkyl interrupted by oxygen;  $C_5$ - $C_8$ cycloalkyl,  $C_2$ - $C_{18}$ alkenyl, unsubstituted or  $C_1$ - $C_4$ alkyl-substituted phenyl;  $C_7$ - $C_{10}$ phenoxyalkyl, unsubstituted or  $C_1$ - $C_4$ alkyl substituted  $C_7$ - $C_9$ bicycloalkyl;



or when  $R_7$  is a direct bond,  $R_1$  is  $-CN$ ,  $-SOR_8$ ,  $-SO_2R_8$ ,  $-NO_2$  or  $-COR_8$ ,

when  $n$  is 2,

$R_1$  is  $C_1$ - $C_{18}$ alkylene,  $C_1$ - $C_{18}$ alkylene substituted with  $C_1$ - $C_4$ alkyl;  $C_2$ - $C_{18}$ alkylene substituted with  $C_1$ - $C_4$ alkyl and interrupted by oxygen;  $C_2$ - $C_{18}$ alkylene interrupted by oxygen, sulfur,



- 57 -

R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are each independently of the others C<sub>1</sub>-C<sub>18</sub>alkyl, C<sub>2</sub>-C<sub>18</sub>alkyl interrupted by oxygen; C<sub>5</sub>-C<sub>8</sub>cycloalkyl, C<sub>2</sub>-C<sub>18</sub>alkenyl, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl-substituted phenyl, C<sub>7</sub>-C<sub>9</sub>phenylalkyl, C<sub>1</sub>-C<sub>18</sub>alkoxy, C<sub>3</sub>-C<sub>18</sub>alkoxy interrupted by oxygen; C<sub>5</sub>-C<sub>8</sub>cycloalkoxy, C<sub>2</sub>-C<sub>18</sub>alkenyloxy, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl-substituted phenoxy, C<sub>7</sub>-C<sub>9</sub>phenylalkoxy, halogen, C<sub>2</sub>-C<sub>18</sub>alkanoyloxy or unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl substituted benzoyloxy; with the proviso that at least one of R<sub>2</sub>, R<sub>3</sub> or R<sub>4</sub> is C<sub>1</sub>-C<sub>18</sub>alkoxy, C<sub>3</sub>-C<sub>18</sub>alkoxy interrupted by oxygen; C<sub>5</sub>-C<sub>8</sub>cycloalkoxy, C<sub>2</sub>-C<sub>18</sub>alkenyloxy, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl-substituted phenoxy, C<sub>7</sub>-C<sub>9</sub>phenylalkoxy, halogen, C<sub>2</sub>-C<sub>18</sub>alkanoyloxy or unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl substituted benzoyloxy;

R<sub>5</sub> is C<sub>1</sub>-C<sub>18</sub>alkylene, C<sub>5</sub>-C<sub>8</sub>cycloalkylene, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl substituted phenylene;

R<sub>6</sub> is a direct bond, C<sub>1</sub>-C<sub>18</sub>alkylene; or C<sub>1</sub>-C<sub>18</sub>alkylene substituted with C<sub>1</sub>-C<sub>18</sub>alkoxy, C<sub>2</sub>-C<sub>18</sub>alkoxycarbonyl or phenyl;

R<sub>7</sub> is a direct bond or  $\text{---}\overset{\text{O}}{\underset{\text{||}}{\text{C}}}\text{---R}_{13}$ , with the proviso that, when R<sub>7</sub> is a direct bond and n is 1,

R<sub>8</sub> is not a direct bond; and with the proviso that, when R<sub>7</sub> is  $\text{---}\overset{\text{O}}{\underset{\text{||}}{\text{C}}}\text{---R}_{13}$ , R<sub>8</sub> is not a direct bond;

R<sub>8</sub> is C<sub>1</sub>-C<sub>18</sub>alkyl, C<sub>2</sub>-C<sub>18</sub>alkyl interrupted by oxygen; C<sub>5</sub>-C<sub>8</sub>cycloalkyl, C<sub>2</sub>-C<sub>18</sub>alkenyl, C<sub>2</sub>-C<sub>18</sub>alkinyl, C<sub>7</sub>-C<sub>9</sub>phenylalkyl, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl-substituted phenyl,

R<sub>9</sub> is C<sub>1</sub>-C<sub>5</sub>alkyl,

R<sub>10</sub> is hydrogen or methyl,

R<sub>11</sub> and R<sub>12</sub> are each independently of the other hydrogen, CF<sub>3</sub>, C<sub>1</sub>-C<sub>8</sub>alkyl or phenyl, or R<sub>11</sub> and R<sub>12</sub>, together with the carbon atom to which they are bonded, form a C<sub>5</sub>-C<sub>8</sub>cycloalkylidene ring that is unsubstituted or substituted by from 1 to 3 C<sub>1</sub>-C<sub>4</sub>alkyl groups,

R<sub>13</sub> is oxygen or -N(R<sub>14</sub>)-,

R<sub>14</sub> is hydrogen or C<sub>1</sub>-C<sub>8</sub>alkyl,

M is sodium, potassium or ammonium, and

n is 1 or 2

3. A composition according to claim 1, wherein R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are each independently of the others C<sub>1</sub>-C<sub>4</sub>alkyl or C<sub>1</sub>-C<sub>4</sub>alkoxy; with the proviso that at least one of R<sub>2</sub>, R<sub>3</sub> or R<sub>4</sub> is C<sub>1</sub>-C<sub>4</sub>alkoxy.

4. A composition according to claim 1, wherein R<sub>5</sub> is C<sub>2</sub>-C<sub>4</sub>alkylene.

- 58 -

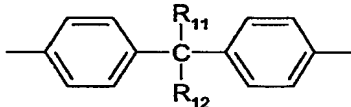
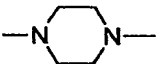
5. A composition according to claim 1, wherein  
when n is 1,

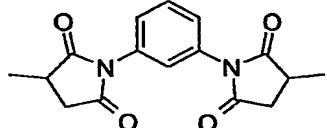
R<sub>1</sub> is hydrogen, C<sub>1</sub>-C<sub>18</sub>alkyl, C<sub>1</sub>-C<sub>12</sub>alkyl substituted with furyl, morpholine, C<sub>1</sub>-C<sub>4</sub>dialkylamino, C<sub>1</sub>-C<sub>4</sub>trialkylammonium or M<sup>+</sup> O<sub>3</sub>S<sup>-</sup>; C<sub>2</sub>-C<sub>12</sub>alkyl interrupted by oxygen; cyclohexyl, C<sub>4</sub>-C<sub>12</sub>alkenyl, phenyl, C<sub>7</sub>-C<sub>10</sub>phenoxyalkyl, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl substituted C<sub>7</sub>-C<sub>9</sub>bicycloal-

kyl;  $\text{—R}_5\text{—}\begin{array}{c} \text{R}_2 \\ | \\ \text{Si} \\ | \\ \text{R}_4 \end{array}\text{—R}_3$ , or when R<sub>7</sub> is a direct bond, R<sub>1</sub> is -CN, -SOR<sub>8</sub> or -SO<sub>2</sub>R<sub>8</sub>;

when n is 2,

R<sub>1</sub> is C<sub>2</sub>-C<sub>12</sub>alkylene, C<sub>2</sub>-C<sub>12</sub>alkylene substituted with methyl; C<sub>2</sub>-C<sub>12</sub>alkylene substituted with methyl and interrupted by oxygen; C<sub>4</sub>-C<sub>12</sub>alkylene interrupted by oxygen, sulfur, phenylene or

cyclohexylene;  or ; or when R<sub>6</sub> and R<sub>7</sub> are a

direct bond, R<sub>1</sub> is ;

R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are each independently of the others C<sub>1</sub>-C<sub>8</sub>alkyl, C<sub>4</sub>-C<sub>8</sub>alkyl interrupted by oxygen; cyclohexyl, C<sub>2</sub>-C<sub>12</sub>alkenyl, benzyl, C<sub>1</sub>-C<sub>8</sub>alkoxy, C<sub>3</sub>-C<sub>8</sub>alkoxy interrupted by oxygen; cyclohexyloxy, C<sub>2</sub>-C<sub>12</sub>alkenyloxy, phenoxy, benzyloxy, chloro, bromo, C<sub>2</sub>-C<sub>8</sub>alkanoyloxy or benzoyloxy; with the proviso that at least one of R<sub>2</sub>, R<sub>3</sub> or R<sub>4</sub> is C<sub>1</sub>-C<sub>8</sub>alkoxy, C<sub>3</sub>-C<sub>8</sub>alkoxy interrupted by oxygen; cyclohexyloxy, C<sub>2</sub>-C<sub>12</sub>alkenyloxy, phenoxy, benzyloxy, chloro, bromo, C<sub>2</sub>-C<sub>8</sub>alkanoyloxy or benzoyloxy;

R<sub>5</sub> is C<sub>2</sub>-C<sub>8</sub>alkylene, cyclohexylene or phenylene;

R<sub>6</sub> is a direct bond, C<sub>1</sub>-C<sub>8</sub>alkylene; or C<sub>1</sub>-C<sub>8</sub>alkylene substituted with C<sub>1</sub>-C<sub>4</sub>alkyl, C<sub>2</sub>-C<sub>8</sub>alkoxy-carbonyl or phenyl;

- 59 -

$R_7$  is a direct bond or  $\text{—}\overset{\text{O}}{\underset{\text{||}}{\text{C}}}\text{—}R_{13}$ , with the proviso that, when  $R_7$  is a direct bond and  $n$  is 1,

$R_6$  is not a direct bond; and with the proviso that, when  $R_7$  is  $\text{—}\overset{\text{O}}{\underset{\text{||}}{\text{C}}}\text{—}R_{13}$ ,  $R_6$  is not a direct bond;

$R_8$  is  $C_1$ - $C_{12}$ alkyl,  $C_2$ - $C_{12}$ alkyl interrupted by oxygen; cyclohexyl,  $C_2$ - $C_{12}$ alkenyl,  $C_2$ - $C_{12}$ alkinyl, benzyl or phenyl,

$R_{11}$  and  $R_{12}$  are each independently of the other hydrogen or  $C_1$ - $C_8$ alkyl, or  $R_{11}$  and  $R_{12}$ , together with the carbon atom to which they are bonded, form a cyclohexylidene ring that is unsubstituted or substituted by from 1 to 3 methyl groups,

$R_{13}$  is oxygen or  $\text{—}N(R_{14})\text{—}$ ,

$R_{14}$  is hydrogen or  $C_1$ - $C_4$ alkyl,

$M$  is sodium or potassium, and

$n$  is 1 or 2.

6. A composition according to claim 1, wherein

when  $n$  is 1,

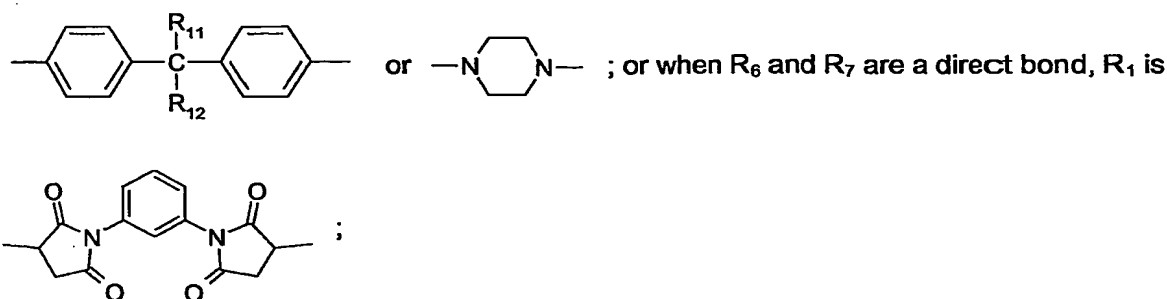
$R_1$  is hydrogen,  $C_1$ - $C_{18}$ alkyl,  $C_1$ - $C_8$ alkyl substituted with furyl, morpholine,  $C_1$ - $C_4$ dialkylamino,  $C_1$ - $C_4$ trialkylammonium or  $M^+ \text{—}O_3S\text{—}$ ;  $C_2$ - $C_8$ alkyl interrupted by oxygen; cyclohexyl,  $C_4$ - $C_{10}$ alkenyl, phenyl,  $C_7$ - $C_{10}$ phenoxyalkyl, unsubstituted or  $C_1$ - $C_4$ alkyl substituted  $C_7$ - $C_9$ bicycloal-

kyl;  $\text{—}R_5\text{—}\overset{\text{R}_2}{\underset{\text{R}_4}{\text{Si}}}\text{—}R_3$ , or when  $R_7$  is a direct bond,  $R_1$  is  $\text{—}CN$ ,  $\text{—}SOR_8$  or  $\text{—}SO_2R_8$ ;

when  $n$  is 2,

$R_1$  is  $C_2$ - $C_8$ alkylene,  $C_2$ - $C_8$ alkylene substituted with methyl;  $C_2$ - $C_{10}$ alkylene substituted with methyl and interrupted by oxygen;  $C_4$ - $C_{12}$ alkylene interrupted by oxygen or sulfur;

- 60 -



R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are each independently of the others C<sub>1</sub>-C<sub>4</sub>alkyl, cyclohexyl, C<sub>2</sub>-C<sub>6</sub>alkenyl, benzyl, C<sub>1</sub>-C<sub>4</sub>alkoxy, cyclohexyloxy, C<sub>2</sub>-C<sub>6</sub>alkenyloxy, phenoxy, benzyloxy, chloro, C<sub>2</sub>-C<sub>4</sub>alkanoyloxy or benzoyloxy; with the proviso that at least one of R<sub>2</sub>, R<sub>3</sub> or R<sub>4</sub> is C<sub>1</sub>-C<sub>4</sub>alkoxy, cyclohexyloxy, C<sub>2</sub>-C<sub>6</sub>alkenyloxy, phenoxy, benzyloxy, chloro, C<sub>2</sub>-C<sub>4</sub>alkanoyloxy or benzoyloxy;

R<sub>5</sub> is C<sub>2</sub>-C<sub>6</sub>alkylene or cyclohexylene,

R<sub>6</sub> is a direct bond, C<sub>1</sub>-C<sub>6</sub>alkylene; or C<sub>1</sub>-C<sub>6</sub>alkylene substituted with methyl, C<sub>2</sub>-C<sub>6</sub>alkoxycarbonyl or phenyl;

R<sub>7</sub> is a direct bond or  $\text{—}\overset{\text{O}}{\parallel}\text{C—R}_{13}$ , with the proviso that, when R<sub>7</sub> is a direct bond and n is 1,

R<sub>8</sub> is not a direct bond; and with the proviso that, when R<sub>7</sub> is  $\text{—}\overset{\text{O}}{\parallel}\text{C—R}_{13}$ , R<sub>8</sub> is not a direct bond;

R<sub>8</sub> is C<sub>1</sub>-C<sub>8</sub>alkyl or C<sub>2</sub>-C<sub>12</sub>alkenyl,

R<sub>11</sub> and R<sub>12</sub> are each independently of the other hydrogen or C<sub>1</sub>-C<sub>6</sub>alkyl,

R<sub>13</sub> is oxygen or -N(R<sub>14</sub>)-,

R<sub>14</sub> is hydrogen or methyl,

M is sodium or potassium, and

n is 1 or 2.

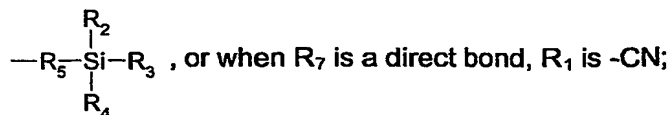
7. A composition according to claim 1, ~~wherein~~

when n is 1,

R<sub>1</sub> is hydrogen, C<sub>1</sub>-C<sub>18</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkyl substituted with furyl, morpholine, C<sub>1</sub>-C<sub>4</sub>dialkylamino, C<sub>1</sub>-C<sub>4</sub>trialkylammonium or M<sup>+</sup> O<sub>3</sub>S<sup>-</sup>; C<sub>2</sub>-C<sub>6</sub>alkyl interrupted by oxygen; cyclohexyl, C<sub>4</sub>-C<sub>10</sub>al-

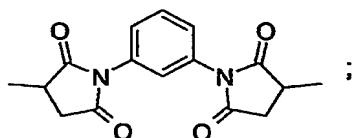
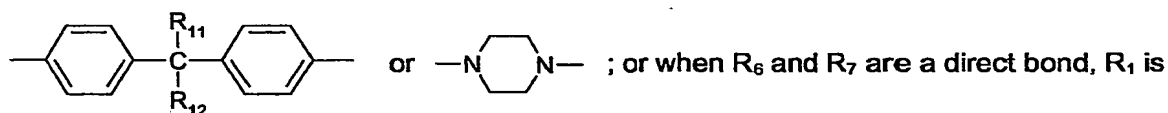
- 61 -

kenyl, phenyl; C<sub>7</sub>-C<sub>9</sub>phenoxyalkyl, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl substituted C<sub>7</sub>-C<sub>9</sub>bicycloalkyl;



when n is 2,

R<sub>1</sub> is C<sub>2</sub>-C<sub>6</sub>alkylene, C<sub>2</sub>-C<sub>4</sub>alkylene substituted with methyl; C<sub>4</sub>-C<sub>8</sub>alkylene substituted with methyl and interrupted by oxygen; C<sub>4</sub>-C<sub>8</sub>alkylene interrupted by oxygen;



R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are each independently of the others C<sub>1</sub>-C<sub>4</sub>alkyl or C<sub>1</sub>-C<sub>4</sub>alkoxy; with the proviso that at least one of R<sub>2</sub>, R<sub>3</sub> or R<sub>4</sub> is C<sub>1</sub>-C<sub>4</sub>alkoxy;

R<sub>5</sub> is C<sub>2</sub>-C<sub>4</sub>alkylene,

R<sub>6</sub> is a direct bond, C<sub>1</sub>-C<sub>3</sub>alkylene; or C<sub>1</sub>-C<sub>3</sub>alkylene substituted with methyl, C<sub>2</sub>-C<sub>3</sub>alkoxycarbonyl or phenyl;

R<sub>7</sub> is a direct bond or  $\text{—}\overset{\text{O}}{\parallel}\text{C—R}_{13}$ , with the proviso that, when R<sub>7</sub> is a direct bond and n is 1,

R<sub>6</sub> is not a direct bond; and with the proviso that, when R<sub>7</sub> is  $\text{—}\overset{\text{O}}{\parallel}\text{C—R}_{13}$ , R<sub>6</sub> is not a direct bond;

R<sub>11</sub> and R<sub>12</sub> are each independently of the other hydrogen or C<sub>1</sub>-C<sub>4</sub>alkyl,

R<sub>13</sub> is oxygen or -N(R<sub>14</sub>)-,

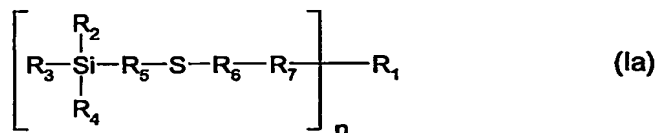
R<sub>14</sub> is hydrogen,

M is potassium, and

n is 1 or 2; or an oligomeric hydrolysis product of the compound of the formula Ia.



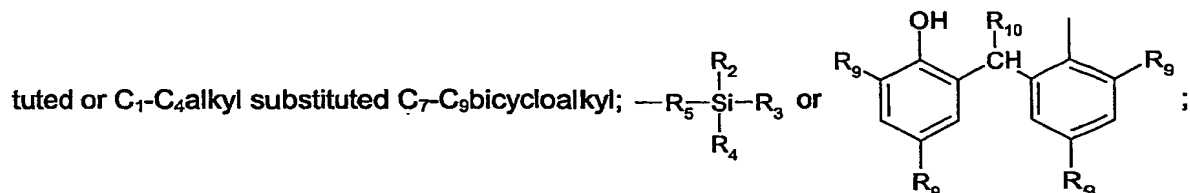
8. A composition according to claim 1, in which component a) is a natural or synthetic rubber or vulcanizate prepared therefrom.
9. A composition according to claim 1, in which component a) is a polydiene vulcanizate, a halogen-containing polydiene vulcanizate, a polydiene copolymer vulcanizate or an ethylene-propylene terpolymer vulcanizate.
10. A composition according to claim 1, wherein component (b) is silica or alumina, or a mixture of silica and alumina.
11. A composition according to claim 1, wherein component (b) is present in an amount of 1 to 40% based on the weight of component (a).
12. A composition according to claim 1, wherein component (c) is present in an amount of 0.01 to 10% based on the weight of component (a).
13. A composition according to claim 1, comprising in addition, besides components (a) and (b), further additives.
14. A composition according to claim 13, comprising as further additives, one or more components selected from the group consisting of pigments, dyes, levelling assistants, dispersants, plasticizers, vulcanization activators, vulcanization accelerators, vulcanizers, charge control agents, adhesion promoters, antioxidants and light stabilizers.
15. A composition according to claim 13, comprising, as further additives, phenolic antioxidants, aminic antioxidants, organic phosphites or phosphonites and/or thio-synergists.
16. A compound of the formula Ia



wherein, when n is 1,

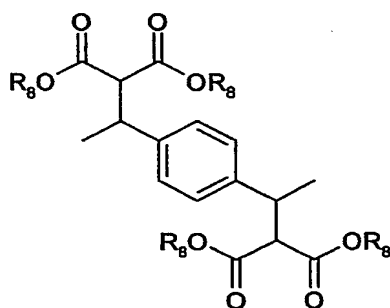
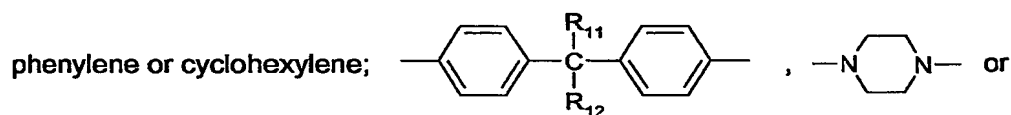
- 63 -

$R_1$  is hydrogen,  $C_1$ - $C_{25}$ alkyl,  $C_1$ - $C_{25}$ alkyl substituted with furyl, morpholine,  $C_1$ - $C_4$ dialkylamino,  $C_1$ - $C_4$ trialkylammonium or  $M^+ \text{ } ^-O_3S^-$ ;  $C_2$ - $C_{25}$ alkyl interrupted by oxygen;  $C_5$ - $C_{12}$ cycloalkyl,  $C_2$ - $C_{25}$ alkenyl, unsubstituted or  $C_1$ - $C_4$ alkyl-substituted phenyl;  $C_7$ - $C_{12}$ phenoxyalkyl, unsubstituted or  $C_1$ - $C_4$ alkyl substituted  $C_7$ - $C_9$ bicycloalkyl;  $-\text{R}_5-\text{Si}(\text{R}_2)(\text{R}_4)-\text{R}_3$  or

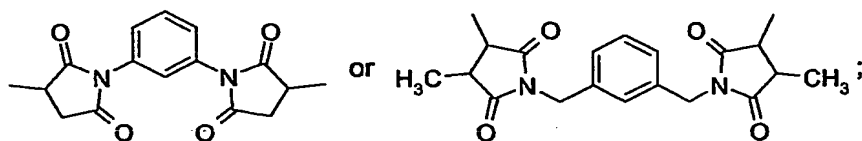


when  $n$  is 2,

$R_1$  is  $C_1$ - $C_{25}$ alkylene,  $C_1$ - $C_{25}$ alkylene substituted with  $C_1$ - $C_4$ alkyl;  $C_2$ - $C_{25}$ alkylene substituted with  $C_1$ - $C_4$ alkyl and interrupted by oxygen;  $C_2$ - $C_{25}$ alkylene interrupted by oxygen, sulfur,



; or when  $R_6$  and  $R_7$  are a direct bond,  $R_1$  is



$R_2$ ,  $R_3$  and  $R_4$  are each independently of the others  $C_1$ - $C_{25}$ alkyl,  $C_2$ - $C_{25}$ alkyl interrupted by oxygen;  $C_5$ - $C_{12}$ cycloalkyl,  $C_2$ - $C_{25}$ alkenyl, unsubstituted or  $C_1$ - $C_4$ alkyl-substituted phenyl,  $C_7$ - $C_9$ phenylalkyl,  $C_1$ - $C_{25}$ alkoxy,  $C_3$ - $C_{25}$ alkoxy interrupted by oxygen;  $C_5$ - $C_{12}$ cycloalkoxy,  $C_2$ - $C_{25}$ alkenyloxy, unsubstituted or  $C_1$ - $C_4$ alkyl-substituted phenoxy,  $C_7$ - $C_9$ phenylalkoxy, halogen,  $C_2$ - $C_{25}$ alkanoyloxy or unsubstituted or  $C_1$ - $C_4$ alkyl substituted benzoyloxy; with the proviso that at least one of  $R_2$ ,  $R_3$  or  $R_4$  is  $C_1$ - $C_{25}$ alkoxy,  $C_3$ - $C_{25}$ alkoxy interrupted by oxygen;

- 64 -

C<sub>5</sub>-C<sub>12</sub>cycloalkoxy, C<sub>2</sub>-C<sub>25</sub>alkenyloxy, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl-substituted phenoxy, C<sub>7</sub>-C<sub>9</sub>phenylalkoxy, halogen, C<sub>2</sub>-C<sub>25</sub>alkanoyloxy or unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl substituted benzoyloxy;

R<sub>5</sub> is C<sub>1</sub>-C<sub>25</sub>alkylene, C<sub>5</sub>-C<sub>12</sub>cycloalkylene, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl substituted phenylene;

R<sub>6</sub> is a direct bond, C<sub>1</sub>-C<sub>25</sub>alkylene; or C<sub>1</sub>-C<sub>25</sub>alkylene substituted with C<sub>1</sub>-C<sub>25</sub>alkyl, C<sub>2</sub>-C<sub>25</sub>alkoxycarbonyl or phenyl;

R<sub>7</sub> is a direct bond or  $\text{---}\overset{\text{O}}{\parallel}\text{C---R}_{13}$ , with the proviso that, when R<sub>7</sub> is a direct bond and n is 1,

R<sub>6</sub> is not a direct bond; and with the proviso that, when R<sub>7</sub> is  $\text{---}\overset{\text{O}}{\parallel}\text{C---R}_{13}$ , R<sub>6</sub> is not a direct bond;

R<sub>8</sub> is C<sub>1</sub>-C<sub>25</sub>alkyl, C<sub>2</sub>-C<sub>25</sub>alkyl interrupted by oxygen; C<sub>5</sub>-C<sub>12</sub>cycloalkyl, C<sub>2</sub>-C<sub>25</sub>alkenyl, C<sub>2</sub>-C<sub>25</sub>alkinyl, C<sub>7</sub>-C<sub>9</sub>phenylalkyl, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl-substituted phenyl,

R<sub>9</sub> is C<sub>1</sub>-C<sub>5</sub>alkyl,

R<sub>10</sub> is hydrogen or C<sub>1</sub>-C<sub>4</sub>alkyl,

R<sub>11</sub> and R<sub>12</sub> are each independently of the other hydrogen, CF<sub>3</sub>, C<sub>1</sub>-C<sub>12</sub>alkyl or phenyl, or R<sub>11</sub> and R<sub>12</sub>, together with the carbon atom to which they are bonded, form a C<sub>5</sub>-C<sub>8</sub>-cycloalkylidene ring that is unsubstituted or substituted by from 1 to 3 C<sub>1</sub>-C<sub>4</sub>alkyl groups,

R<sub>13</sub> is oxygen or -N(R<sub>14</sub>)-,

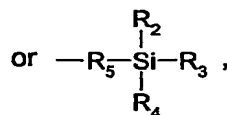
R<sub>14</sub> is hydrogen or C<sub>1</sub>-C<sub>12</sub>alkyl,

M is sodium, potassium or ammonium, and

n is 1 or 2; or an oligomeric hydrolysis product of the compound of the formula Ia.

**17.** A compound according to claim 16, wherein  
when n is 1,

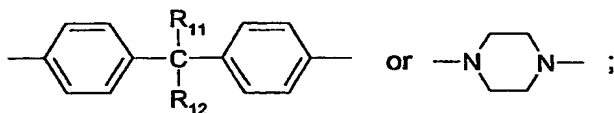
R<sub>1</sub> is hydrogen, C<sub>1</sub>-C<sub>18</sub>alkyl, C<sub>1</sub>-C<sub>4</sub>alkyl substituted with furyl, morpholine, C<sub>1</sub>-C<sub>4</sub>dialkylamino, C<sub>1</sub>-C<sub>4</sub>trialkylammonium or M<sup>+</sup> O<sub>2</sub>S<sup>-</sup>; C<sub>7</sub>-C<sub>9</sub>alkyl interrupted by oxygen; cyclohexyl, C<sub>4</sub>-C<sub>10</sub>alkenyl, phenyl; C<sub>7</sub>-C<sub>9</sub>phenoxyalkyl, unsubstituted or C<sub>1</sub>-C<sub>4</sub>alkyl substituted C<sub>7</sub>-C<sub>9</sub>bicycloalkyl;



when n is 2,

- 65 -

R<sub>1</sub> is C<sub>2</sub>-C<sub>6</sub>alkylene, C<sub>2</sub>-C<sub>4</sub>alkylene substituted with methyl; C<sub>4</sub>-C<sub>8</sub>alkylene substituted with methyl and interrupted by oxygen; C<sub>4</sub>-C<sub>8</sub>alkylene interrupted by oxygen;



R<sub>2</sub>, R<sub>3</sub> and R<sub>4</sub> are each independently of the others C<sub>1</sub>-C<sub>4</sub>alkyl or C<sub>1</sub>-C<sub>4</sub>alkoxy; with the proviso that at least one of R<sub>2</sub>, R<sub>3</sub> or R<sub>4</sub> is C<sub>1</sub>-C<sub>4</sub>alkoxy;

R<sub>5</sub> is C<sub>2</sub>-C<sub>4</sub>alkylene,

R<sub>6</sub> is C<sub>1</sub>-C<sub>3</sub>alkylene; or C<sub>1</sub>-C<sub>3</sub>alkylene substituted with methyl, C<sub>2</sub>-C<sub>3</sub>alkoxycarbonyl or phenyl;

R<sub>7</sub> is  $\text{—}\overset{\text{O}}{\parallel}\text{C—R}_{13}\text{—}$ ,

R<sub>11</sub> and R<sub>12</sub> are each independently of the other hydrogen or C<sub>1</sub>-C<sub>4</sub>alkyl,

R<sub>13</sub> is oxygen or -N(R<sub>14</sub>)-,

R<sub>14</sub> is hydrogen,

M is potassium, and

n is 1 or 2; or an oligomeric hydrolysis product of the compound of the formula Ia.

**18.** A process for ensuring the coupling of a white reinforcing filler to elastomer compositions reinforced by a white filler, which comprises incorporating into the elastomer at least one component (c) according to claim 1 and then vulcanizing the composition.

**19.** The use of component (c) according to claim 1 as coupling agent for ensuring the coupling of a white reinforcing filler with an elastomer.